



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/991,822	11/06/2001	Robert R. Moore	ATMI-417-CIP-DIV	2166
25559	7590	12/15/2004	EXAMINER	
ATMI, INC. 7 COMMERCE DRIVE DANBURY, CT 06810			STRICKLAND, JONAS N	
			ART UNIT	PAPER NUMBER
			1754	

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/991,822

Applicant(s)

MOORE ET AL.

Examiner

Jonas N. Strickland

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11/06/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-35 is/are allowed.
- 6) ☒ Claim(s) 22-24 and 36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/06/01
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 22-24 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carpenter (US Patent 5,873,388) in view of Nguyen et al. (US Patent 5,919,425) and Itoh et al. (US Patent 4,719,088).

Applicant claims a method for scrubbing chemical pollutants in a gas stream comprising the steps of continuously introducing said gas stream into a scrubbing chamber, said scrubbing chamber containing coated packing in at least two vertically separated beds, said coating being adapted to entrap or react with said pollutants; monitoring the amount of said pollutants being removed from said stream; and regenerating the coating on one of said beds while continuously flowing said gas stream through the other of said beds.

Carpenter discloses a process for treating process gases, such as VOCs, which has a multiple vessel of VOC-abatement catalytic oxidation system, having two vessels arranged so that one is on-stream, while one is off-stream, for continuous treatment of the VOC-containing effluent gas stream (col. 2, lines 1-59). Carpenter continues to disclose monitoring the amount of pollutants being removed from the gas stream (col. 10, lines 30-58). Carpenter continues to disclose wherein the monitoring of the gas stream is vital to the cyclic regeneration of the vertical beds used to clean the gas streams. However, Carpenter does not disclose a scrubbing chamber and a coated packing.

Nguyen et al. teaches a catalyzed packing material for regenerative catalytic oxidation for treating volatile organic compounds, carbon monoxide or combinations thereof (see abstract). Nguyen et al. continues to teach wherein the substrate of the

Art Unit: 1754

packing material is coated and wherein the packing material substrate may be in any configuration, shape, or size, which exposes it to the gas to be treated (col. 6, lines 27-67).

Itoh et al. teaches a process for treating pollutants in gas streams using a scrubber chamber having various kinds of packing material (col. 1, lines 21-29).

Therefore, it would have been obvious to one of ordinary skill in the art to modify the teachings of Carpenter, based on the teachings of Nguyen et al. and Itoh et al., by using a scrubbing chamber having packing material, which is regenerated, since Itoh et al. teaches a process for treating pollutants in gas streams using a scrubbing chamber with various packing materials, and Nguyen et al. teaches using coated packing materials which are regenerated in order to treat pollutants in gaseous streams. Such modification would have been obvious to one of ordinary skill in the art, because one of ordinary skill in the art, would have expected a process for treating gaseous streams comprised of pollutants as taught by Nguyen et al. and Itoh et al. to be similarly useful and applicable to a process for treating pollutants in gaseous streams as taught by Carpenter. Carpenter continues to disclose wherein the process for treating the pollutants in a gas stream is also useful in regenerative oxidation systems (col. 13, lines 47-50) as also taught by Nguyen et al.

With respect to claims 23 and 24, it would have been obvious to one of ordinary skill in the art to monitor the amount of pollutants leaving the scrubber, as well as regenerating, based on predetermined time intervals, since Carpenter discloses monitoring the amount of pollutants being removed from the gas stream (col. 10, lines

Art Unit: 1754

30-58). Carpenter continues to disclose wherein the monitoring of the gas stream is vital to the cyclic regeneration of the vertical beds used to clean the gas streams.

***Allowable Subject Matter***

Claims 25-35 are allowed.

The following is an examiner's statement of reasons for allowance: The instant claims 25-35 are allowable over the cited prior art, because claims 25-35 recite wherein the thermal reactor comprises a central chamber comprising heating elements, an entry end and an exit end of the chamber, a side inlet communicating with an exterior air space defined by an exterior wall of the reactor and said heating elements, an interior air space communicating with said exterior air space, said interior space defined by an interior wall of the reactor and said heating elements, and an orifice in said interior wall for introducing air from said interior space into said central chamber.

The cited prior art directed to Carpenter (US Patent 5,873,388), Nguyen et al. (US Patent 5,919,425) and Itoh et al. (US Patent 4,719,088), fail to disclose these limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

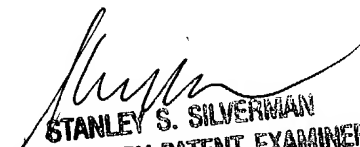
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonas N. Strickland whose telephone number is 571-272-1359. The examiner can normally be reached on M-TH, 7:30-5:00, off 1st Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonas N. Strickland  
December 8, 2004



STANLEY S. SILVERMAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700